

Work Order ID 145858

Tuesday, June 07, 2016 9:14:40 AM

145858

Page 1

Item ID: D3847-1

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Wearpad

Start Date: 5/4/2016 Start Qty: 30.00

30

Cust Item ID:

Required Date: 5/7/2016 Req'd Qty: 30.00

30

Customer:

Reference:

Approvals: Process Plan: ll Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D3847	D

105

0.00

105

Purchasing

Purchasing

5.45

Memo

ISSUE PO 32646
CUT PER DRWG D3847 REV.D

0.00

30

JUN 8 2016

DAS

13

9-89

115

Receive & Inspect for Damage & Mat'l Certs

0.00

115

Packaging

Packaging

Memo

0.00

DAS

6

9-89

30

JUN 11 2016

125

QC6- Inspect dimensions to drawing

0.00

125

QC

Quality Control

Memo

0.00

(35)

16-07-08

DAS

9

9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td style="border: none;"></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																	
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DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : _____							

Work Order ID 145858

Tuesday, June 07, 2016 9:14:40 AM

145858

Page 3

Item ID: D3847-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Wearpad

Start Date: 5/4/2016

Start Qty: 30.00

30

Cust Item ID:

Required Date: 5/7/2016

Req'd Qty: 30.00

30

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Run Start ***NR1***Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

QC5- Inspect part completeness to step on W/O

0.00

160

QC

Memo

0.60

Quality Control

(30) 16-07-13 PD

170

QC10- Inspect visual per QSI004- ground welds

0.00

170

QC

Memo

0.60

Quality Control

(30) 16-07-13 PD

193

0.00

193

HandFinish

Memo

7.20

Hand Finishing

APPLY TEXTURE COATING ON TOP CONCAVE SURFACE AS PER DWG

TEXTURE COATING BATCH: 13481130 DAS
41
9-89
16-7-18

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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Work Order ID 145858***145858***

Page 4

Tuesday, June 07, 2016 9:14:40 AM

Item ID: D3847-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Wearpad

Start Date: 5/4/2016

Start Qty: 30.00

30

Cust Item ID:

Required Date: 5/7/2016

Req'd Qty: 30.00

30

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start ***NR1***

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

196

QC3- Inspect Part Finish

0.00

196

QC

Memo

0.30

Quality Control

DAS

38

9-89

JUL 19 2016

200

Identify as per dwg & Stock Location: FP-001

0.00

200

Packaging

Memo

0.30

Packaging

LOCATION : FP001

x30 of 16/07/16

210

QC21- Final Inspection - Work Order Release

0.00

210

QC

Memo

3.00

Quality Control

DAS

21

9-89

JUL 19 2016

dm 16/07/16

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Picklist Print

Tuesday, June 07, 2016 9:14:40 AM

Page 1

Work Order ID: 145858

145858

Parent Item: D3847-1

D3847-1

Parent Item Name: Wearpad

Start Date: 5/4/2016

Required Date: 5/7/2016

Start Qty: 30.00

Required Qty: 30.00

Comments: IPP RevA: New issue DD verified by:EC
14.11.25 AS PER DWG REV.C DD VERF:JLM IPP REV:C 16.03.31
AS PER DWG REV.D DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3847-1P		Purchased		No			Each	0.0000		30			
D3847-1P									**				
Wearpad													
M304S16GA		Purchased		No		100	sf	102.1908	0.1236	3.903159			
M304S16GA									**				
304/316 Sheet .063													

Location	Loc Qty	Loc Code
MAT010	12.97	
m134677	12.97	
MAT019	1.6	
m134551	1.6	
TPI	87.620844	
m134604	87.620844	

DAS
6
9-89
JUL 04 2016
DAS
13
9-89
AUG 02 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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DART AEROSPACE LTD		Work Order:	145250
Description: Wearpad		Part Number:	D3847-1
Inspection Dwg: D3847 Rev: D			Page 1 of 1

INSPECTION SHEET

[illegible]

Measured by:	9	Checked by:	36	QC Inspector:	
Date:	16-07-08	Date:	16-07-08	Date:	

Engineering Approval: (If necessary)		Date:	
--	--	--------------	--

Rev	Date	Change	Revised by	Approved
A	09.09.21	New Issue	KJ	
B	15.07.23	Dwg Rev updated	KJ	
C	16.04.15	Dwg Rev updated	KJ	

DQA: _____ Date: _____

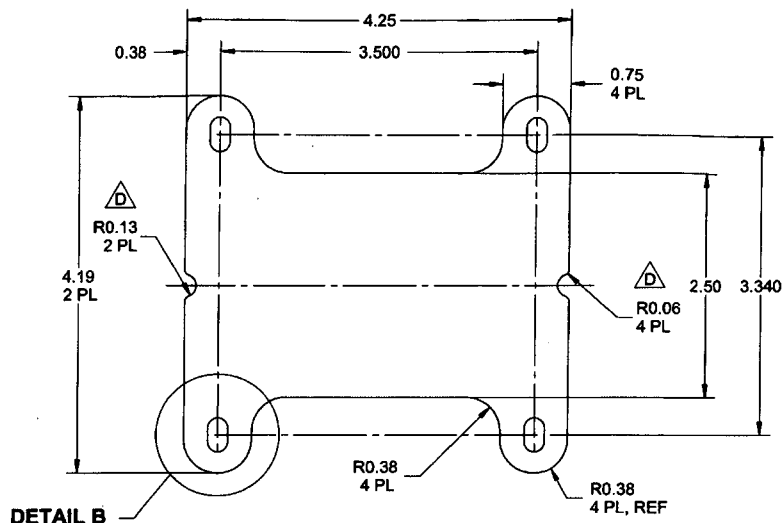


WORK ORDER NON-CONFORMANCE / UPDATE

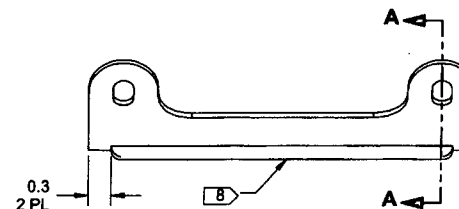
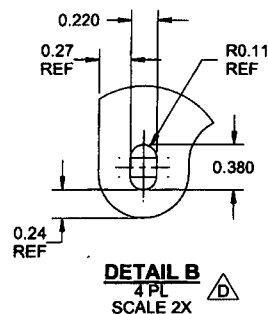
QA Closed: _____ Date: _____

Work Order update only ☐

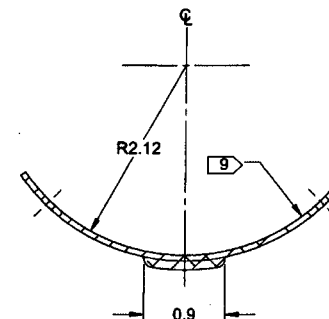
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Misidentified ☐	Past Due ☐																																																																



D3847-1F WEARPAD
(FLAT PATTERN)



D3847-1 WEARPAD
(MAKE FROM D3847-1F)



SECTION A-A

- NOTES:**
- 1) MATERIAL -1F: AISI 304/316 STAINLESS STEEL 16 GAUGE 0.063 THICK
PER MIL-S-5059 OR AMS 5513 OR 5524 OR ASTM A240 OR ASME SA240
REF DART SPEC. M304S16GA
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
 - 7) WEIGHT: 0.23 lbs
 - 8) BUILDUP HARD SURFACING 0.17 TO 0.20 THICK USING 8259 ROD PER QSI 004 SECTION 4.5 (AUTOMATED WELDING) OR
BUILDUP HARD SURFACING 0.19 TO 0.25 THICK USING 2059B ROD PER QSI 004 SECTION 4.1 (MANUAL WELDING)
 - 9) COAT ENTIRE TOP (CONCAVE) SURFACE WITH TEXTURED COATING 0.02-0.04 THICK PER DART QSI 005 4.9

RELEASED
2016-03-31
EN 16-554

APPROVED

	UPDATE NOTES FOR AUTOMATED WELDING. UPDATE CURRENT DRAWING STANDARDS AND TOLERANCES. REMOVE FINISH. ADD TEXTURED COATING NOTE. UPDATE MATERIAL NOTES. -3F, -5F, -7F & -8F SIDE VIEW REMOVED. 387, 782, 781 REMOVED 0.080 DIMENSION. D81, D61, 8C7, 8C5, R0.13 TOOLING NOTATIONS ADDED, (ADDITIONALLY 8C2, 0.2 DIM WAS 0.05 (MANUFACTURING REQUEST).		AJS	15.09.28
D				
C	REMOVED D3846-3/-5/-7/-9 GASKETS, ZN D2-1. ADDED TEXTURED COATING, ZN B3-1. UPDATED WEIGHTS, ZN C3-1/A8-2		AK	14.08.06
B	CORRECT TYPO D3847-047 WAS D3847-045, ZN B5-1; 5.82 WAS 6.25 (ZN A4-2); 42.9 WAS 45.71 (ZN B4-5)		RF	09.06.30
A	NEW ISSUE		RF	09.03.30
REV.	DESCRIPTION		BY	DATE
DESIGN	RF	DART AEROSPACE USA, INC.		
DRAWN	AJS	EUGENE, OR		
CHECKED	ML	DRAWING NO.	REV. D	
MFG. APPR.	DD	D3847	SHEET 1 OF 2	
APPROVED	WM	TITLE	SCALE	
DE APPR.	DS	WEARPLATE ASSY	NTS	
DATE	15.09.28			

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DQA: _____ Date: _____

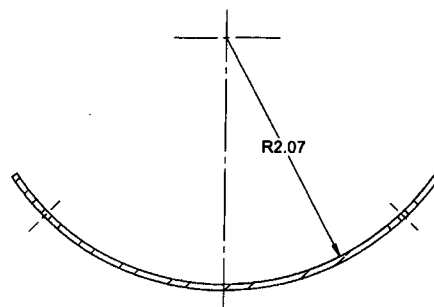


WORK ORDER NON-CONFORMANCE / UPDATE

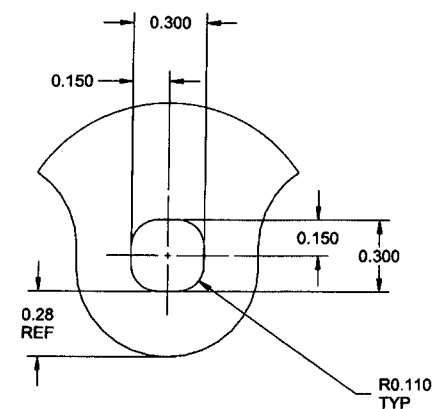
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Work Order update only ☐

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Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
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Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER :							



SECTION C-C
SCALE 4X
C3-2
C4-3
C3-4
C2-5



DETAIL D
SCALE 4X
B5-2
B6-3
B3-4
B4-5

RELEASED
2016-03-31

APPROVED

DESIGN	RF	DART AEROSPACE USA, INC. EUGENE, OR	
DRAWN	AJS		
CHECKED	ML	DRAWING NO. D3847	REV. D
MFG. APPR.	DD	SHEET 7 OF 7	
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	WEARPLATE ASSY	NTS
DATE	15.09.28	COPYRIGHT © 2008 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval																																																									
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																

T.P.I. INDUSTRIES INC.

148 GOODFELLOW
DELSON, QUÉBEC J5B 1V4
CANADA
Tel: (450) 633-0484
Fax: (450) 633-0879

Packing Slip

Packing Slip No.: 7652
Date: 2016-06-29
Page: 1

Sold to:		Ship to:	
Dart Aerospace Chantal Lavoie 1270 Aberdeen Hawkesbury, Ontario K6A 1K7 Canada		Dart Aerospace Chantal Lavoie 1270 Aberdeen Hawkesbury, Ontario K6A 1K7 Canada	
Order No.: 32646		Sold By:	
Shipped By:		Ship Date: 2016-06-29	
Tracking No.:			

Item No	Unit	Description	Quantity
d2281	Chaque	d2281 jack saddle ✓	30
d2585	Chaque	d2585 latch clamp ✓	40
d3847-1	Chaque	d3847-1 ✓	90
d3537-1	Chaque	d3537-1 wearpad ✓	40
d3564-13	Chaque	d3564-13 ✓	12
16/7/4 SP			
Comment: Net / 30 from date of invoice 2% svc. chg. on invoices over 30 days			



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO32646

Purchase Order Date 6/8/2016

PO Print Date 6/8/2016

Page Number 1 of 12

Order From :

TPI INDUSTRIES INC.
148 RUE GOODFELLOW
DELSON, QUEBEC J5B 1V4
CANADA

VC-TP1001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

E-MAILED

JUN 08 2016

Contact Name

Vendor Phone 450-633-0484

Ship To Contact

Ship To Phone

Ship Via:

Ship Acct:

Buyer

Customer POID

Customer Tax # 10127-2607

Terms Net 30

Currency CAD

FOB Destination-Collect

Line Nbr	Reference Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
	Line Comments		Promise Date				
	Delivery Comments						
1	D3847-1P	Wearpad	6/22/2016 Yes 6/22/2016		30.00 Each	\$5.45	\$163.50
CUT AS PER DWG D3847-1 REV. D B145858 MATERIAL 304 SHEET 16GA							
Line Total:							\$163.50
2	D3847-1P	Wearpad	6/22/2016 Yes 6/22/2016		30.00 Each	\$5.45	\$163.50
CUT AS PER DWG D3847-1 REV. D B145859 MATERIAL 304 SHEET 16GA							
Line Total:							\$163.50

Note:

6/8/2016

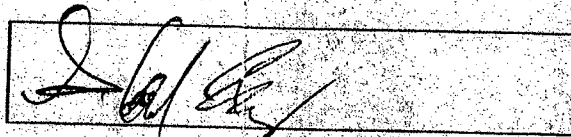
TPI Waterjet cutting follow up sheet

WC100128

machine hours	1204h
diamond hours	134h
mixing tube hours	0h
TAJ calibration	13-06-2016

customer po	part #	Qty	lot #	date done	cut by	quality spot check	Note
dart 32646	D-3847-1	90	see mill test	27/06/2016	GR	Jonathan Lessard Gabriel Rioux	
dart 32646	D-3537-1	40	see mill test	27/06/2016	GR	Jonathan Lessard Gabriel Rioux	
dart 32646	D3564-13	12	see mill test	28/06/2016	GR	Jonathan Lessard Gabriel Rioux	.188 hole need to be drill due to tight tolerance and taper in thin material in @ .188 and out @ .175

Opérateur



Superviseur

